

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for the controlled separation of a dispersion of an aqueous solution and organic solution formed in the mixing section of an extraction step into their own phases during metal recovery in the separation section of a liquid-liquid extraction process, the method comprising:

- a) feeding the dispersion ~~wherein the dispersion fed~~ into the separation section;
- b) conducting the fed dispersion ~~conducted~~ into an outward flow field of said separation section, which field is formed by means of a partition wall in the separation section;
- c) causing the separated phases of the fed dispersion ~~and in which field the phases that have separated from the dispersion are made to~~ flow substantially in the direction of the longitudinal axis of the separation section;
- d) damming up ~~but~~ the dispersion remaining in the middle of the separated phases ~~is dammed up~~ by means of at least one reversing element placed in the rear part of the outward flow field extending from the sidewall of the separation section to the partition wall, the reversing element comprising at least two plate-like components, between which there is a reversing channel;
- e) turning ~~wherein~~ the direction of the dispersion ~~is-substantially turned to~~ a vertical flow;
- f) reversing by means of after the at least one reversing element the direction of the dispersion and separated solution phases ~~is reversed~~ in the rear space of the separation section in substantially the opposite direction;
- g) returning the dispersion and separated solution phases in the return flow field towards the feed end of the separation section; and
- h) removing the separated solutions ~~are removed~~ from the separation section.

2. (currently amended) [[A]] The method according to claim 1, wherein by means of a picket fence, the direction of the flow of the dispersion and separated solution phases in the returning step the direction of flow of the dispersion and the separated solutions is substantially reversed in the front end of the return flow field, in the rear end of the separation section, is caused to be parallel with the longitudinal axis of the separation section by means of a picket fence.
3. (currently amended) [[A]] The method according to claim 1 wherein the cross-section of the flow fields decreases constantly in the direction of flow.
4. (currently amended) [[A]] The method according to claim 1, wherein the length of the partition wall is 85 — 95% of the length of the settler.
5. (currently amended) [[A]] The method according to claim 1, wherein the upper edge of a first plate-like component of the reversing element, the underflow plate, extends into the organic solution and the organic solution ~~is made to flow~~ flows through a slotted zone arranged in the upper part of the plate-like component into the rear space of the separation section as several sub-flows.
6. (currently amended) [[A]] The method according to claim 5, wherein the number of sub-flows is 10 — 100.
7. (currently amended) [[A]] The method according to claim 1, wherein the damming up of the dispersion flow dammed-up by means of the first plate-like part of the reversing element ~~is made~~ causes the dispersion to flow into the reversing channel from under the first plate-like part.
8. (currently amended) [[A]] The method according to claim 1, wherein the dispersion that has flowed to the reversing element ~~is made to flow~~ flows into the rear space after the reversing element from above the last plate-like component of said reversing element.

9. (currently amended) ~~[[A]]~~ The method according to claim 1, wherein the metal ~~to be~~ recovered is one of the metals copper, uranium, cobalt, nickel, zinc or molybdenum.

10. (currently amended) Equipment for a controlled separation of a dispersion of aqueous solution and organic solution formed in a mixing section into their own phases during metal recovery in a liquid-liquid extraction settler, comprising ~~which comprises~~ a feed end, rear end, sidewalls, bottom and headboxes of separated solutions, ~~wherein the settler is equipped with a~~ and a solid partition wall dividing the settler into two sections, substantially parallel to the sidewalls of the settler, where said partition divides the settler into an outward flow field and a return flow field, and further comprising ~~with~~ a reversing element which extends in the outward flow field from one of the sidewalls to the end of the partition wall located crosswise in relation to the longitudinal axis of the settler, ~~where~~ said reversing element comprising ~~comprises~~ of at least two reverser plates situated at different heights.

11. (currently amended) ~~The Equipment~~ equipment according to claim 10, further comprising ~~wherein~~ a picket fence ~~[[is]]~~ located at the front end of the return flow field in the rear part of the settler, which is fastened at one end to the end of the partition wall and at its other end to the back of the sidewall or to the corner of the sidewall and rear end.

12. (currently amended) ~~The Equipment~~ equipment according to claim 11, further comprising ~~wherein~~ guiding plates ~~[[are]]~~ situated behind the slots in the picket fence to reverse the flow.

13. (currently amended) ~~The Equipment~~ equipment according to claim 10, wherein the length of the partition wall is 85 – 95% the length of the settler.

14. (currently amended) ~~The Equipment~~ equipment according to claim 10, wherein the partition wall forms an angle of 5 – 150° with the longitudinal axis of the settler so that the cross-section of the flow fields formed by the partition wall decreases in the direction of flow.

15. (currently amended) The Equipment equipment according to claim 10, wherein the first reverser plate of the reversing element, the underflow plate, is located higher than the second reverser plate, the overflow plate.
16. (currently amended) The Equipment equipment according to claim 10, wherein the upper edge of the first reverser plate is located inside the organic solution in the settler.
17. (currently amended) The Equipment equipment according to claim 10, wherein the distance of the lower edge of the first reverser plate from the bottom of the settler is 15 — 30 % of the solution height of the settler.
18. (currently amended) The Equipment equipment according to claim 10, wherein the reverser plates are mainly solid.
19. (currently amended) The Equipment equipment according to claim 10, further comprising wherein a slotted zone [[is]] formed in the upper edge of the first reverser plate of a distance corresponding to 5 — 25 % of the height of the reverser plate in question.
20. (currently amended) The Equipment equipment according to claim 10, wherein a slotted zone is formed in the lower edge of the first reverser plate of a distance corresponding to 5 — 15 % of the height of the reverser plate in question.
21. (currently amended) The Equipment equipment according to claim 10, further comprising wherein a slotted zone [[is]] formed in the upper edge of the second reverser plate, the overflow plate of a distance corresponding to 5 — 15 % of the height of the reverser plate in question.
22. (currently amended) The Equipment equipment according to claim 10, wherein the distance of the lower edge of the second reverser plate from the bottom of the settler is 3 — 10% of the solution height of the settler.

23. (currently amended) The Equipment equipment according to claim 10, wherein the upper edge of the second reverser plate is placed below the surface of the solution, to a distance that is 20 — 40 % of the solution height of the settler.
24. (currently amended) The Equipment equipment according to claim 10, wherein the reverser plates of the reversing element are placed in the settler at a 10 — 30 ° angle to the vertical.
25. (currently amended) The Equipment equipment according to claim 10, wherein the upper edge of the reverser plates is inclined towards the feed end of the settler.
26. (currently amended) The Equipment equipment according to claim 10, wherein in front of the upper part of the slotted zone of the second reverser plate of the reversing element there is located a solid blocking plate in the same direction as the reverser plate, and that wherein the vertical position of said blocking plate can be changed using its support elements.
27. (currently amended) The Equipment equipment according to claim 10, wherein ~~the~~ headboxes of the settler are located in front of the return flow field at the feed end of the settler.
28. (currently amended) The Equipment equipment according to claim 10, wherein the mixing section is located in front of the outward flow field of the settler.
29. (currently amended) The Equipment equipment according to claim 10, wherein the settler is equipped with a picket fence and/or other regulating elements to control the flow.